REMARKS/ARGUMENTS

Remarks:

Claims 1-15 have been cancelled without prejudice. Claims 19-36 were submitted on July 7, 2003, but were not entered. Applicant requests that claims 19-36 not be entered. New claims 37-54 have been added, with claims 37, 45, and 51 being independent. Reconsideration and allowance of the above-referenced application are respectfully requested.

Claims 1-8 and 10-15 stand rejected under 35 U.S.C. 102(e) as allegedly being anticipated by Lincoln, U.S. patent No. 6,301,226. Claim 9 stands rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over Lincoln in view of Jain, U.S. Patent No. 5,805,577. These rejections are respectfully traversed. Claims 1-15 have been cancelled without prejudice and replaced with corresponding new claims 37-54.

Applicant appreciates the response to arguments in the latest office action and submits new claims 37-54 to clarify the subject matter being claimed. The new claims have been drafted to better emphasize the patentable distinctions in light of the official action and the cited references. In particular, independent claim 37 recites, "determining rate-based, flow-control data in a network switch, in response to receipt of a forward resource management control cell in the network switch", and "modifying in the network switch the backward resource management control cell, before forwarding the backward resource management control cell to the source node, based on the rate-based, flow-control data determined in response to the receipt of the forward resource management control cell."

Independent claim 45 recites, "management event circuitry operatively coupled to the source port circuitry to receive control cells from the source virtual channel and to compute rate-based, flow-control data in response to receipt of a forward resource management control cell that corresponds to a connection linking a source node and a destination node via the data transmission apparatus; and return cell circuitry operatively coupled to the source and destination port circuitry and to the management event circuitry, the return cell circuitry comprising circuitry to receive control cells from the destination port circuitry, to modify a backward resource management control cell based on the rate-based, flow-control data computed by the management event circuitry, and to provide the modified backward resource management control cell to the source port circuitry for transmission over source virtual channels." Independent claim 51 recites, "means for initiating preparation of rate-based, flow-control data in response to receipt of a forward resource management cell from the source node and before receipt of a backward resource management cell corresponding to the forward resource management control cell."

Recalculating rate-based, flow-control data, such as explicit rate (ER) data, when a backward resource management (BRM) cell is received at, and processed by an Asynchronous Transfer Mode (ATM) switch can require a high-speed processing unit to ensure that the ER calculation time does not exceed the desired cell processing and transport delay. Typically, the processor must perform traffic management algorithms and gather statistics like current queue lengths and statistics per connection and port. The claimed event-based systems and

techniques can significantly reduce the amount of required processor resources to control Available Bit Rate (ABR) based flows in ATM equipment.

In the present invention, a table indexed by a connection identifier with one entry per active ABR connection can be used to hold the last calculated ER estimates in the switch. The table can be maintained by a processor system that performs the traffic management algorithms based on per port and per connection statistics for the switch. In contrast with the cited references, table updates are driven by events generated by forward resource management (FRM) cells passing the port.

FRM events can be queued until the switch's processor is ready to process the events. The processor can calculate an updated ER for the corresponding connection and can store the result in the table where it can then be used for BRM modification until the next event for that connection occurs and a recalculation is performed. Thus, the BRM cells can be modified using only the table, and the rate-based, flow-control data need not be recalculated in response to receipt of the BRM cell.

Independent claims 37, 45, and 51 are patentable based on the above distinctions over the art of record. Dependent claims 38-44, 46-50 and 52-54 are patentable based on the above arguments and their own merits. In view of the above remarks, therefore, all of the currently pending claims 37-54 should be in condition for allowance. A formal notice to that effect is respectfully solicited.

No fee is believed to be due Please apply any necessary charges or credits to Deposit Account No. 06-1050.

Respectfully submitted,

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